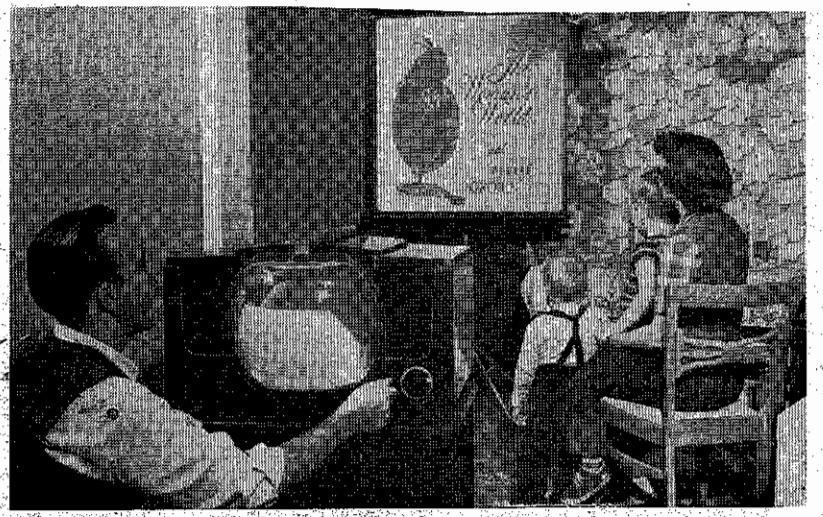
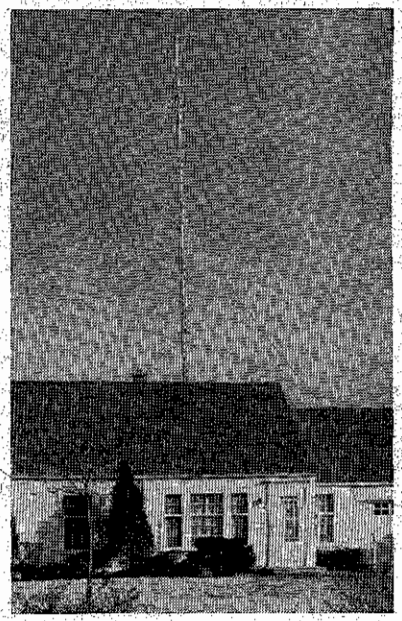


BY ADAPTING A SPECIAL TUBE to his television set, Frank Maiorana makes it possible for his family to see a projected image on an ordinary movie screen, as shown in this actual photograph of a WTMJ program.



MASSIVE, rotatable aerial elements extend 65 feet off the ground.

DADDY IS A HAM—radio operator, that is. The whole thing is fascinating to Frank's two boys, Patrick Francis and Joseph Paul, who watch Daddy "log" in.

Frank Maiorana "Works" All Over World; Travels by Dial

Being electronically minded really pays off for **Frank Maiorana,** of Engineering Service, for his home is literally bristling with special apparatus and gadgets.

Frank's greatest pride—outside of his wife, Patricia, and sons Joseph Paul and Patrick Francis—is a huge, new rotatable array (collection of aerial elements..), 65 feet high off the ground and 35 feet long from tip to tip, which consists of the various elements he needs to beam and receive radio waves in operating his amateur or "ham" radio station.

This array multiplies his power output in a given direction to such an extent that his signal is equivalent to 30,000 watts peak from a regular half-wave antenna or station normally operating at over 10,000 watts input. (WTMJ operates at 5,000 watts). Amateurs are limited to 1000 watts input power to the final amplifier stage.

When adjustments are necessary, the array can be lowered to the ground without dismantling, from a hinged joint at the ground level, by the use of a winch located in the front yard. It is rested and held off the ground on a simple wood frame in the back yard.

Rotate Array

The array can be rotated quickly and by remote control from the 'shack' by means of an electric motor. Tuning of the array is also accomplished remotely by an electric motor. The array consists of two wide-spaced beams mounted side by side on an 18-foot yard arm. Above the amateur radio antenna elements is a smaller TV antenna at about 72 feet height off the ground. Because Frank's house is located on a hill, the effective height is enhanced.

Frank is a very active "ham" radio operator, and, using his new 28.5 megacycle array, he has "worked" over 300 stations, including 188 African and 68 Australian and New Zealand contacts in a little over a month. He talks regularly with fellow "hams" in such places as Basutoland, Swaziland, Mozambique, Kenya Colony, Northern and Southern Rhodesia, Israel, Scotland, and Italy.

Then, there have been social contacts with W7LWD (**Chris Nizic,** of our Portland, Ore., office); **Carl Tory,** Vancouver service supervisor; and **Bob Valkenberg,** manager of our South African affiliate.

Hams Across the Ocean

He handles considerable traffic coming into Milwaukee, also. For example, he recalls a ¾-hour conversation of a missionary's wife in the Belgian Congo with her aunt in Milwaukee; of a Milwaukee mother with her son in Paraguay; and a tearful reunion of a Navy wife with her husband stationed in the Panama Canal Zone.

Frank maintains a recorder to take down conversations in case the Milwaukee party cannot be reached by telephone. If they can be reached, they may talk directly via the telephone and radio set.

Since Frank wishes to keep fully occupied at all times, he recently rigged up a television projection set using a Schmidt optical system, and a regular movie projection screen, so that he can watch television on the screen. The 4 feet by 3 feet image is bright and clear.